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ANALYSIS OF BHADAWARI BUFFALO MILK AS PREBIOTICS FOR GROWTH OF PROBIOTICS

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ABSTRACT

The milk of buffalo is consumed mostly in all local areas of Maharashtra. A2 type of milk is found effective in marinating the health profile of consumers. It is assumed that the milk obtained from the different breeds of the buffalo are rich in probiotics especially Lactobacillus. Researchers are working in culturing probiotics in milk of A2 milk from different milking animals. The maximum growth profile observed in the milk of milking animal is considered as prebiotics source.

Keywords: Lactobacillus, *Lactobacillus plantarum*



SHORT COMMUNICATION

The milk of buffalo is consumed mostly in all local areas of Maharashtra. A2 type of milk is found effective in marinating the health profile of consumers. It is assumed that the milk obtained from the different breeds of the buffalo are rich in probiotics especially Lactobacillus. Researchers are working in culturing probiotics in milk of A2 milk from different milking animals. The maximum growth profile observed in the milk of milking animal is considered as prebiotics source¹⁻⁵. Prebiotics are nothing but are source of food for probiotics that is Lactobacillus⁶⁻⁹. A total of 100 milk samples was collected from Bhadawari (n=100) buffalo. The milk of approximately 40 ml quantity was used for the experimentations. This milk was treated by ultra-high-temperature (UHT) pasteurized for 8 s in an alternative cycle for a period of 60 min¹⁰⁻¹⁵. These collected milk samples were kept in a sterile 100 ml centrifuge tube at 4 °C before use. The total solid content (%), protein (%), casein (%), density (%), freezing point (%), fat (%) and lactose (%) were determined by FOSS milk scan TM 120 (calibrated with buffalo standards, Swabhimani dairy, India) milk analyzer. Similarly, the Lactobacillus plantarum MCC 3595 isolated from sheep milk was cultured in pasteurized milk of Bhadawari milk and its growth effects in form of the CFU count (colony forming unit is determined). To understand the growth rate of probiotics, the other microbes are grown in Bhadawari milk and the CFU count is determined. The same process is done by inculcating the different probiotics in milk at 37 °C in incubator for 24 hours and the CFU count is determined by the serial dilution¹⁶⁻¹⁸.

The various nutrient contents i.e. protein, fat, lactose, total solid content and percentage of casein in the raw milk of Bhadawari are 4.8 ± 0.41 ; 7.0 ± 0.84 ; 5.1 ± 0.54 ; 18.1 ± 1.22 ; 11.5 ± 0.98 ; respectively. Similarly, nutrient contents i.e. protein, fat, lactose, total solid content and percentage of casein in the pasteurised milk of Bhadawari are 4.7 ± 0.41 ; 6.7 ± 0.84 ; 5.3 ± 0.51 ; 17.1 ± 1.28 ; 10.9 ± 0.44 ; respectively. No any significant ($p < 0.05$) changes are observed in the nutrient contents of raw and pasteurized milk as per Figure 1.

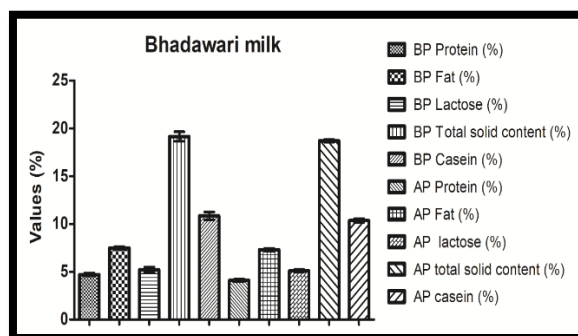


Figure.1. The physiochemical composition of Bhadawari milk

± indicate standard error of means; n=3

On the same ground the different probiotics growth in milk of Bhadawari buffalo was determined by cfu count. It was found that CFU count of *Lactobacillus rhamnosus* was higher in 12×10^8 CFU/ ml as compared to *Lactobacillus plantarum* showing less growth of around 8×10^8 CFU/ ml ($p < 0.05$, $n=3$) as per figure. 2.

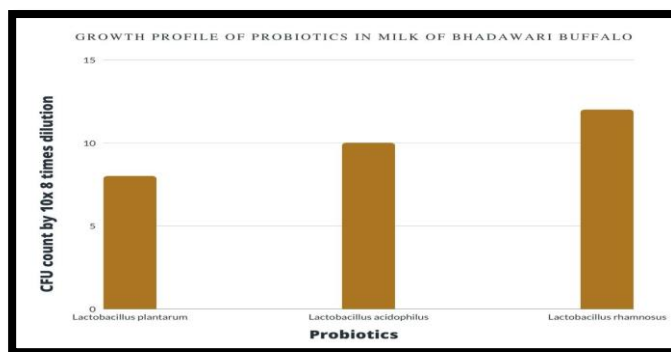


Figure.2. Growth profile of probiotics in Bhadawari milk in CFU count

± indicate standard error of means; n=3

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